

Tutorial Sheet-1

D int a=0, b=0, for (i=0; i(n; i++) at = rand(.); for (j=0; j(m; j++) b+ = rand();

Time Complexity = 0(n+m); Space complexity = 0(1)

Aus.

2) int sum = 0, i;

for (i=0; i(n; i=i+2) & Sum += i; 3

4 loop will run even times.

= 0 (n/2) =) Time Complexity = 0 (n) Ans.

3. jor (i=0, i (n; i= i x2) & Sumt=i; 3

Time Complexity = O (log n) Aus:

a) int sum = 0, i;
for (i = 0; i x i (n; i++)

O (log n) Aus.

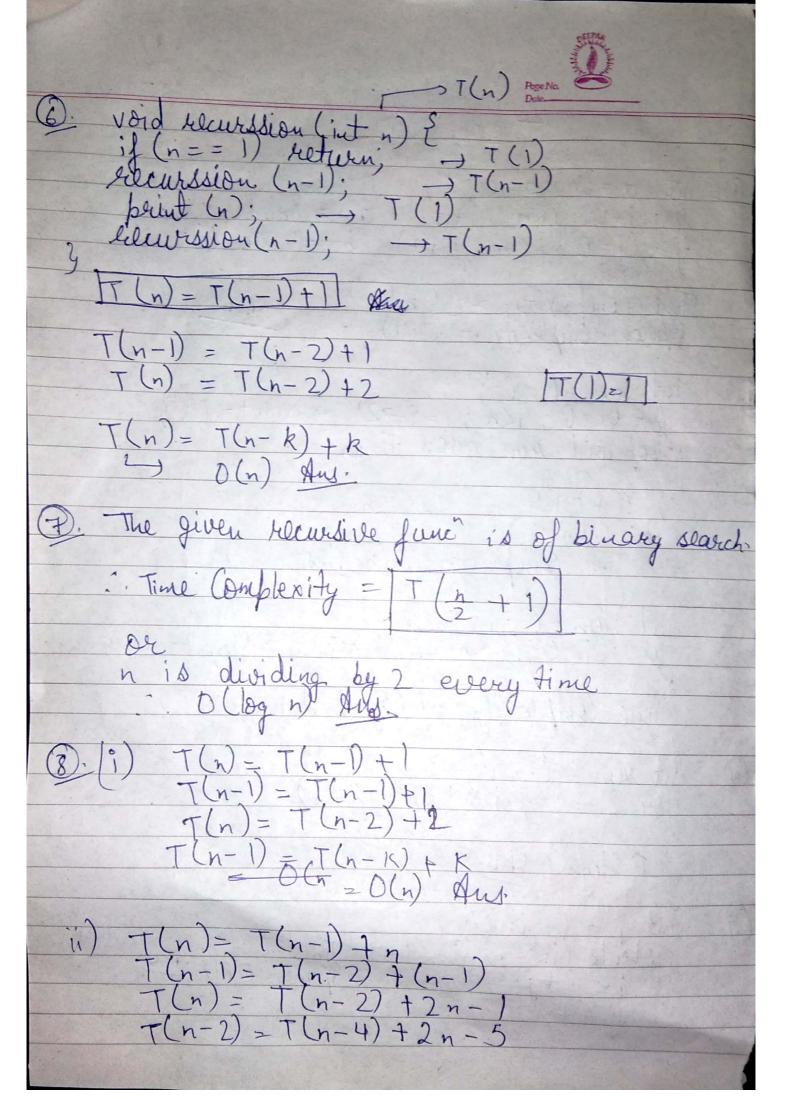
(5): int j = 1, i = 0.

10 lule (i<=n) &

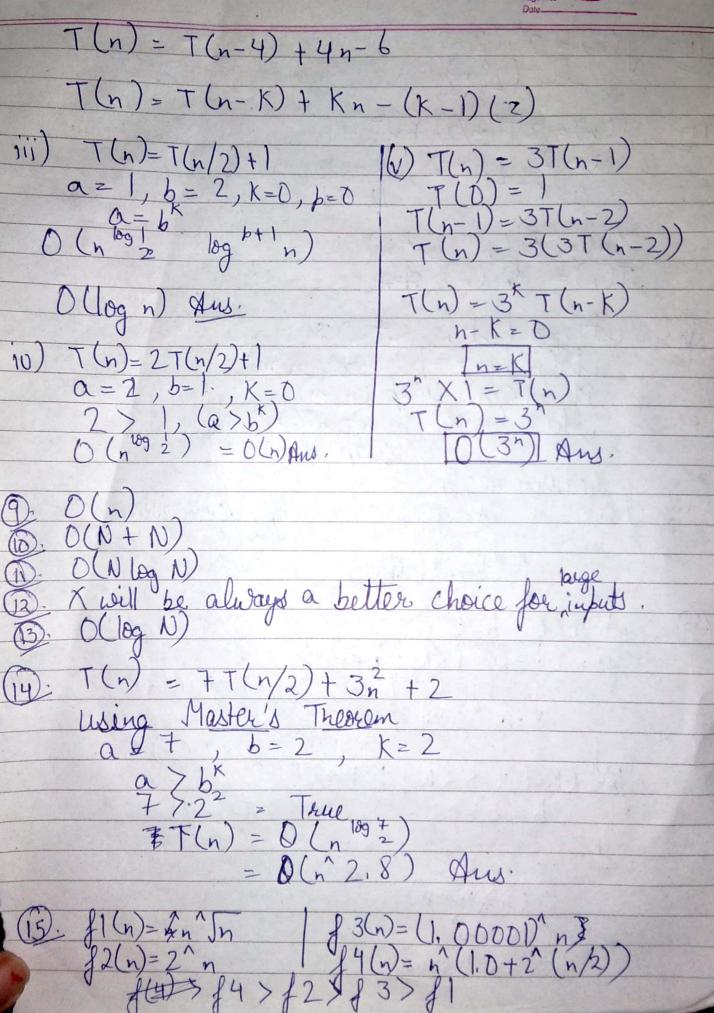
i = i + j;

j + +:

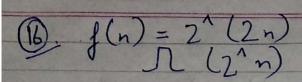
Time=O(n) Aus. Space=O() Aus.











(17)
$$T(n) = 2T(n/2) + n^2$$

 $a = 2$, $b = 2$, $x = 2$
 $2(2^2)$ $p = 0$

B int ged (int n, int m) &

if (n'lom = = p) return m'

if (n<m) swap (n, m);

white (m >0) & n = n'lom;

swap (n, m);

5 here n is gener gradually decreasing

O (logn) Aus.

(19), int
$$a=0$$
, $b=0$;

for $(i=0)$; $i < N$; $i + t > 5$

for $(j=0)$; $j < N$; $j + t > 0 (n)$
 $a=a+j$;

 $0 (n \times n + n)$ $0 (n^2 + n)$ $= 0 (n^2) \text{ Ans.}$